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Vlerick Leuven Gent Management School
the Autonomous Management School of
Ghent University and Katholieke Universiteit Leuven

RESEARCH REPORT

FOREIGN DIRECT INVESTMENTS

Location choices across the value chain

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FLANDERS DISTRICT OF CREATIVITY

Flanders District of Creativity is the Flemish organization for **entrepreneurial creativity.** It was founded in 2004 by the Flemish Government as a non-profit organization and enjoys broad support. Flemish businesses, academia, and public institutions use Flanders DC as a platform for cooperation in the pursuit of a more creative Flanders region.

Creativity is the key ingredient in making companies more successful and in helping regional governments ensure a healthy economy with more jobs. Flanders DC inspires creativity and innovation:

1. by learning from the most **creative regions** in the world,
2. by igniting **creative sparks** in everyday life and business, and
3. by providing **research, practical business tools and business training,** in cooperation with the Flanders DC Knowledge Centre.

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Responses to global challenges are best found within an international network of excellence. With the single aim of learning from the very best, Flanders DC aims to unite the most dynamic regions in the world within the 'Districts of Creativity' network. Every two years, Flanders DC convenes the Creativity World Forum, bringing together government leaders, entrepreneurs, and knowledge institutions to exchange ideas about how to tackle pressing economic problems and make their regions hotbeds for innovation and creativity.

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jij bent FLANDERS' FUTURE

3. The Flanders DC Knowledge Centre: Academic support

The **Flanders DC Knowledge Centre** serves as a link between Flanders DC and Vlerick Leuven Gent Management School. Each year, the Flanders DC Knowledge Centre publishes several reports and develops various tools, case studies and courses. All these projects focus on the role of creativity in a business environment and identify obstacles to, and accelerators of competitive growth.

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- **Het gebruik van Web 2.0 ter ondersteuning van open innovatie en collectieve creativiteit. Lessen uit theorie en praktijk in Vlaanderen.** Stijn Viaene, Steven De Hertogh, Len De Looze, May 2009, published in Dutch

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In addition to these research projects, the Flanders DC Knowledge Centre has also developed the following tools and training sessions:

- **Ondernemen.meerdan.ondernemen**, an online learning platform
- **Creativity Class** for young high-potentials
- **Flanders DC Fellows**, inspiring role models in business creativity
- **Creativity Talks**, monthly seminars on business creativity and innovation
- **Innovix,** online innovation management game
- **Flanders DC Academic Seminars:** research seminars on business creativity and innovation
- **TeamScan**, online tool

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INTRODUCTION

Until the end of the 20th century, the global economy still suffered from trade and investment barriers due to economic nationalism. As this nationalism eroded, firms benefited from the effect of this liberalisation on their worldwide trade. Other important evolutions include the information technology and transportation developments. Due to significant quality improvements and considerably lower costs, the establishment of a real worldwide firm became possible and affordable.

Mainly due to the economic liberalisation and the IT revolutions, global firms tend to not locate their entire value chain in one country anymore. They try to generate strategic advantages or cost benefits by sourcing activities of the value chain towards different countries.

The report therefore analyses firms in terms of single business activities. By connecting the specific location needs of each activity to a country's relative strength of each activity, the relative location advantage of the activity can be determined. These finding are enclosed in an innovative framework which reveals the strengths and weaknesses of each country in the attraction of business activities.

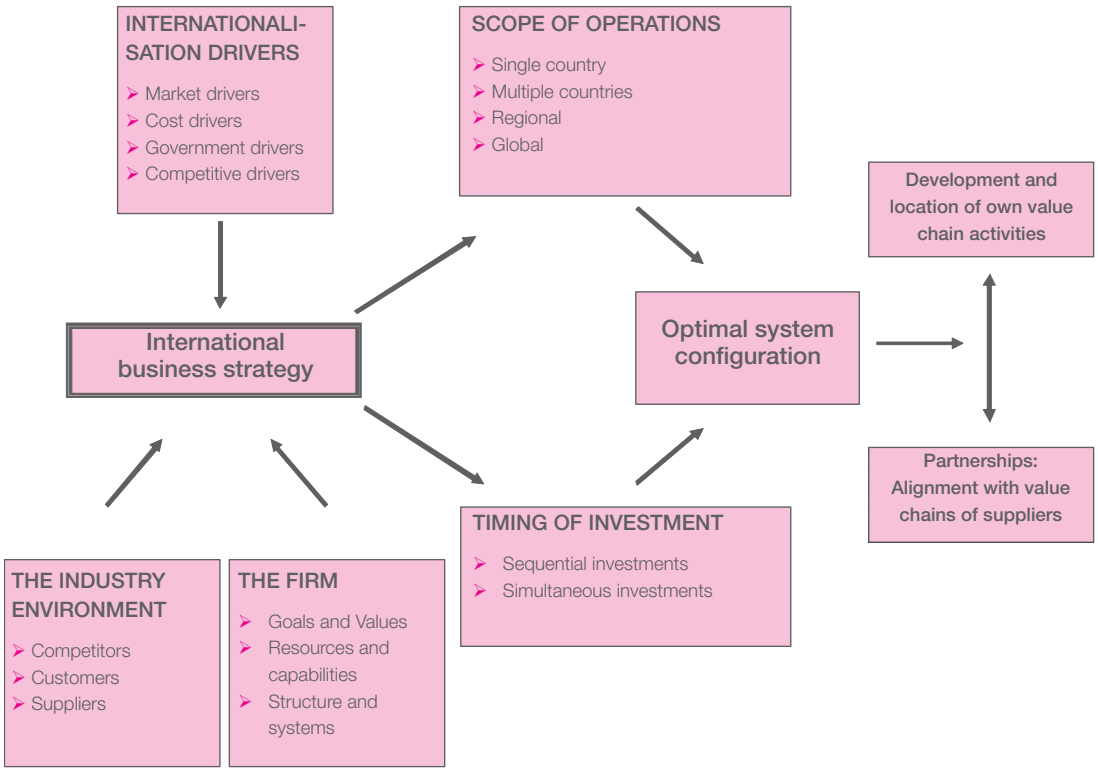
The purpose of this project is to give stakeholders that are involved in developing the new long term vision on Flanders' attractiveness for foreign investments some essential insights into the latest evolutions in international business and economic geography, as well as of Flanders' changing position. This report is the second of two reports on this topic.

Location strategies of firms are closely related to the overall business strategy and the environment in which the firm operates (cf. figure1). Linking strategy to the scope and timing of foreign operations, an optimal system configuration organised across countries emerges. This system will entail an alignment of the own value chain activities with those performed by partners.

The value chain configuration involves two interrelated choices. Firstly, a choice will be made which value chain activities will be performed by the firm itself and which activities will be outsourced. Secondly and based on the outcome of the previous analysis, the optimal location of the value chain activities will be derived.

The structure of this report can be schematised as represented in Figure 1.

Figure 1 Structural overview of the report



1.1 Building blocks

The optimal location choice of the value chain activities follows the chosen international business strategy.
The formulation of an international business strategy depends heavily on the competitive strategy of the business unit. It involves three main building blocks: the industry environment, the goals and capabilities of the firm and the internationalisation drivers.

A competitive strategy focusing on positioning the firm within the industry environment is the most essential part of the business strategy. The positioning involves strategic choices about the way the firm interacts with competitors, customers and suppliers.

The competitive strategy and success of the firm in implementing it is equally, or even more strongly based on the firm's goals, resources and capabilities (the objective appraisal of resources) and its structure and system (which will lead to an effective implementation).

The international strategy is strongly influenced by the **internationalisation drivers**, of which many are industry specific, and which in combination with the chosen competitive strategy and the capabilities of the firm determine the international strategy, including market selection and the mode of entering foreign countries.

1.2 Competitive strategy

A successful international business strategy is necessarily based on a well chosen competitive strategy. The choice results from analysing industry and competitors evolutions and leveraging resources and capabilities in such a way that the firms creates for itself a competitive advantage in that particular business, i.e. earning returns that are significantly above the industry average.
According to Treacy and Wiersema (1995) and Porter (1998), three strategic possibilities arise for firms. The strategic options are represented below.

Table 1 Strategy according to Treacy and Wiersema

Strategic option	Treacy and Wiersema	Porter's generic strategies
Strategy is predicated on the production and delivery of products and services. The objective is to lead the industry in terms of price and convenience.	Operational Excellence	Cost Leadership
Strategy is predicated on tailoring and shaping products and services to fit an increasingly fine definition of the customer. The objective is long-term customer loyalty and long-term customer profitability.	Customer Intimacy	Differentiation (intentional customer loyalty)
Strategy is predicated on producing a continuous stream of state-of-the-art products and services. The objective is the quick commercialisation of new ideas.	Product Leadership	Focus (intentional production innovation)

Source: Strategy: Definitions and meaning (Nickols, 2000)

The strategic choice does not only determine the generic international strategy but also strongly influences the international configuration choices of the activities of the firm. Firms which pursue **operational excellence** will opt for example for low cost production locations while trying to cut back transportation costs etc. Outsourcing will be considered heavily as this can reduce costs. Firms on the **customer intimacy** strategy path will on the other hand try to find high quality production locations which are located close to the market in order to respond quickly to changing needs. Outsourcing will be less attractive as this can reduce the connections with the customer.

1.3 Internationalisation drivers

The **drivers of internationalisation** can be divided in four distinctive drivers. First, market drivers that are mainly related to the extent to which customer needs are similar across countries, marketing is transferable, or customers are global.
Second, cost drivers such as scale economies may push firms to produce for markets stretching across national borders. Cost drivers result also from country-specific differences in production factor conditions such as low labour costs (which attract for example production activities to China) and from favourable logistics (especially if the shipping cost is low to the final value). Third, government drivers such as trade policies, tariff barriers, technical standards, subsidies, ownership restrictions, controls over technology transfers, intellectual property regulations and currency and capital flows controls strongly influence the strategic choices of firms. Fourth, competitive drivers related to market

and rivalry conditions create interdependences between countries and the existence of international competitors.

Internationalisation drivers may be so strong that they create typical industry environments characterised by particular modes of internationalisation chosen by firms. Figure 2 makes a differentiation between industries on the relative importance of international trade versus foreign direct investment (Grant, 2008).

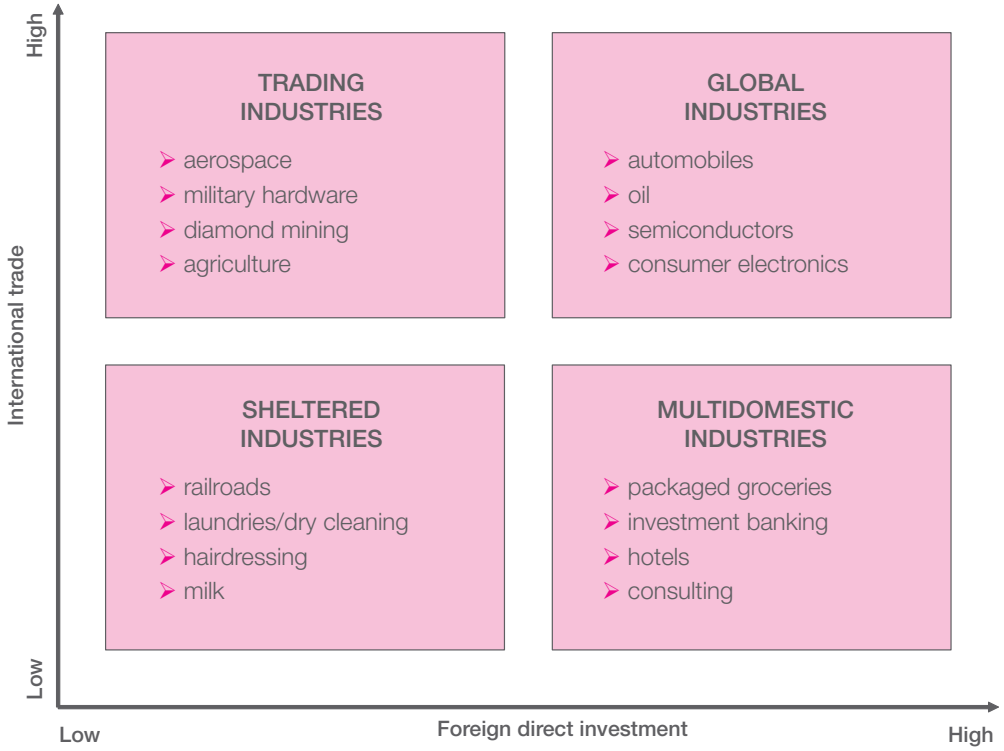
Sheltered industries are characterised by low levels of foreign direct investments and low levels of international trade while being served exclusively by local firms. This can be explained by the fact that they are protected from international competition by regulation, public ownership, barriers to trade, or because their product is more likely to be produced by small and local operators. Among the sheltered industries we count hairdressing (primarily fragmented services), homebuilding (small-scale manufacturers), fresh milk (non tradable products as they are perishable), etc.

Trading industries internationalise primarily through import and export. Transportable products which are not nationally differentiated but subjected to substantial scale economies are mostly exported from one location as this is the most efficient means to exploit overseas markets. This applies to commercial aircraft manufacturers (although their supply can be located overseas as in the case of Boeing), shipbuilders etc. Trading industries also apply to products whose inputs are available on specific locations (as this is the case for Iranian caviar).

Multidomestic industries are characterised by high levels of FDI and low levels of international trade. This can result from the non tradable characteristics of the product (as in the case of service industries as banking, consulting, hotels) or highly national differentiated products (e.g. recorded music, prepared meals, etc.).

Global industries enjoy high levels of FDI and high levels of international trade. Many large-scale manufacturing industries tend to evolve towards global operations. This is increasingly the case for automobiles, consumer electronics, pharmaceuticals, etc.

Figure 2 Patterns of industry internationalisation



Source: Contemporary strategy analysis (Grant, 2008)

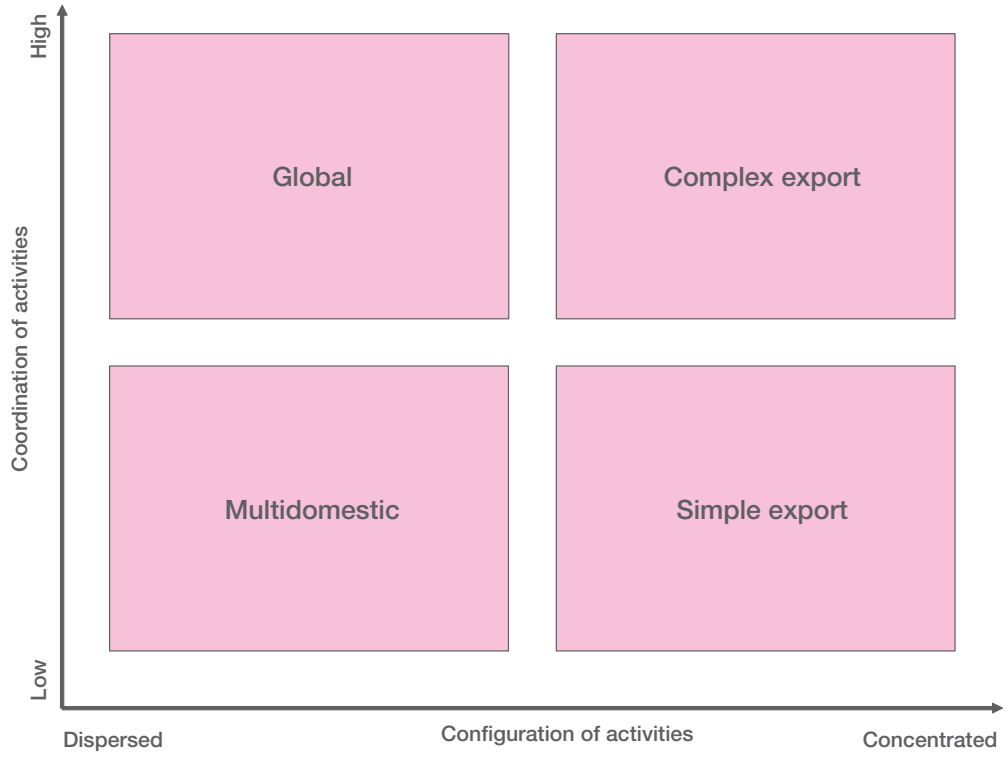
The characterisation in figure 2 is oversimplified and ignores the dynamic nature and firm specific aspects of the internationalisation decisions. Some firms start internationalising by exporting to foreign countries and subsequently provide enough experience and size and decide afterwards to establish foreign subsidiaries. The scope and timing of the international involvement of the firm is a complex interplay of many firms, among which firm-specific capabilities play a major role.

2.1 The scope of international involvement

The choices concerning the geographical scope are often considered within the *'global-local dilemma'*. The level of standardisation across national boundaries and the level of adaptation to meet specific national requirements are of major importance in this decision. In case the adaptations to the national market are very limited or non existent, a centralised production or design can offer huge potentials to realise economies of scale. Products which need to be highly adapted to the national market are in need of decentralized operations and control, as near as possible to the local market.

The global-local dilemma can evoke a number of strategic responses from the firm. These options range from decentralisation to centralisation with possibilities in between. These options will be discussed hereafter and are represented in figure 3.

Figure 3 Geographical Scope - international strategies



Source: Porter (1986)

Simple export involves a concentration of activities in one country. At the same time, marketing, pricing, packaging, distribution, etc. may be determined locally. Porter referred to this strategy as a strategy pursued by firms with a strong location advantage and an organization which suffers from insufficient managerial capabilities.

Following the **multidomestic** strategy, the firm is characterised by loosely internationally coordinated activities. At the same time, the firm disperses its activities overseas. Instead of the export strategy, it will produce and adapt the services and products locally in each national market. Markets are served and treated independently which requires perfectly adapted products. This can be a very successful strategy in case there are few economies of scale and strong needs to adapt the products to local needs. Also in services (in which relationships are often critical) and non-transportable products, the strategy can be very successful or even essential. Management should take care that the practices in different countries do not become too diverse. This could destroy the brand and reputation.

Complex export involves the location of most activities in one country but has a more coordinated marketing, pricing, packaging, etc. approach. Economies of scale can still be obtained in manufacturing activities and R&D. The coordination is, of course, more complex than in the simple export strategy.

The **global strategy** entails the most highly coordinated activities dispersed globally around the world. Each activity will be located in its optimal location taking in mind the specific location advantages. As a result, the R&D, manufacturing, marketing and other supporting activities (such as management) can be located in different countries.

2.2 The timing of internationalisation

Together with deciding about the scope of operations, decisions concerning the timing of international investments need to be taken. The firm can decide to enter foreign countries in a sequential way or enter many countries simultaneously.

Sequential or staged internationalisation is characterised by the fact that the foreign operations will grow step by step. The rate of investments can be outlined before the projects sets off or can be dependent on the local sales successes. In contrast, by simultaneous internationalisation the firm will establish foreign operations in several countries at the same time. The choice between sequential or simultaneous internationalisation depends on the firm's resources and capabilities, but also responds to a wide set of industry and competitors conditions. For instance, in the context of new product introductions, it was established that entering foreign markets sequentially was optimal under the following set of conditions (Kalish et all., 1999):

- Long product life cycle
- Less favourable conditions in foreign markets
- Small foreign markets
- Slow growth in foreign markets
- Low innovativeness in foreign markets
- High fixed cost of entry into foreign markets

- Weak competitiveness of foreign markets
- Weak competitors
- Cooperative competitors
- Monopoly position in foreign markets

The scope and timing of internationalisation should lead to the design of an optimal international configuration of activities of the firm. Within this configuration, the firm does not have to perform all the activities itself, but can decide to outsource activities and align the activities with those of external partners. The implementation of such configuration systems leads to the development of global networks, where firms align their own value chain with those configured by external partners.

Firms are extending their operations globally. They increasingly sell products and spread their production facilities across countries. As a result, aligning distribution and logistics needed to meet global demand with supply becomes increasingly complex. For this alignment, the choice of outsourcing and the design of a global network structure become key elements of a successful strategy implementation.

3.1 The design of global network structures

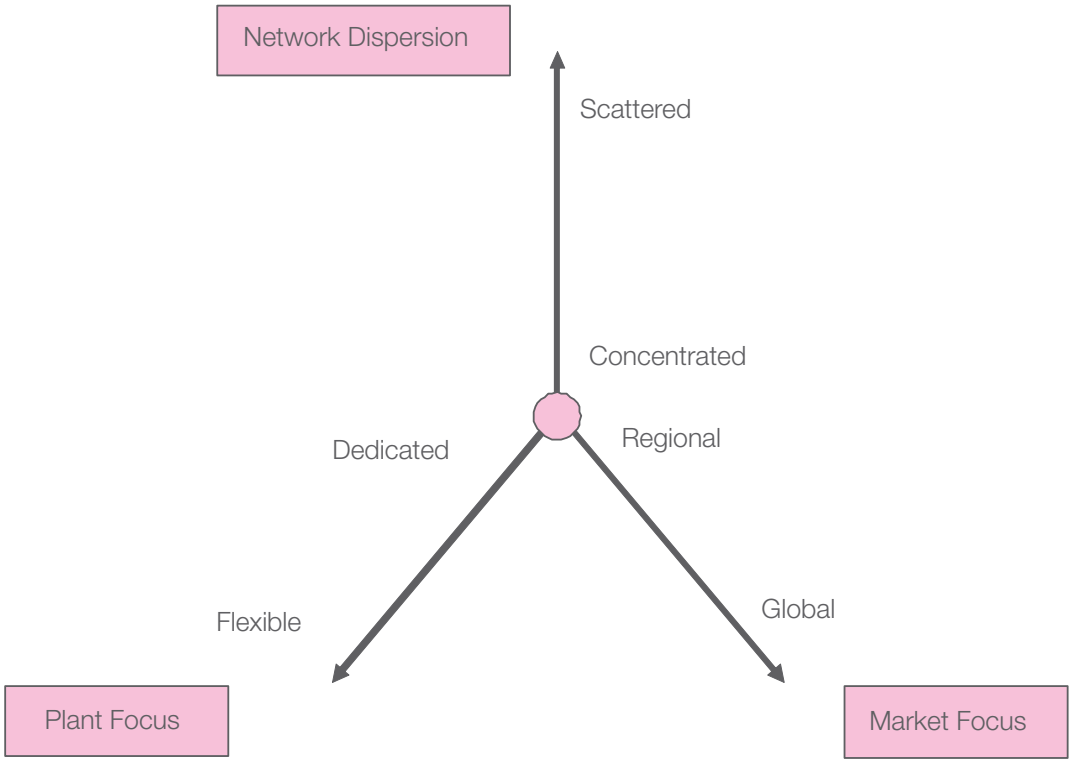
3.1.1 The structural choices regarding own value chain activities

The alignment of the different supply chain stages becomes a critical design choice. This choice includes the location of the different activities and its connecting structure for the activities the firm will perform itself.

A proper analysis of the network design requires a conceptual framework. The framework, as elaborated by Kouvelis and Munson (2004), focuses especially on the production stage, but can easily be generalised to other activities performed by the firm.
Strategic production decisions include the location decision of factories, the allocation of production activities to the various facilities of the network and the management of the distribution of products. The framework of Kouvelis and Munson (2004), as represented in Figure 4, classifies the global network structures along three dimensions: the market focus, the plant focus and the network dispersion. The **market focus** relates to the scope of operations as previously mentioned. It differs between a global strategy, which aims at the production of large fractions of worldwide demand, and a regional strategy, which segments production by region. The **plant focus** relates to diversification of production of each facility. A dedicated strategy generally separates subassemblies into different plants whereas a flexible strategy combines different productions at the same facilities. **Network dispersion** refers to the number of different plants producing the same subassembly per marketing region that has production in some form or other. As such, a concentrated strategy has a single plant for each subassembly type per region of production while a scattered strategy has multiple.

As shown in Figure 4, a firm will position itself in the global network between the two extreme strategies defined in each dimension.

Figure 4 Global network structure classification along three dimensions



Source: Kouvelis and Munson (2004)

3.1.2 How the activity will influence the design choice

The choices regarding the plant focus, the market focus and the network dispersion will heavily influence the network design of value chain activities. Kouvelis and Munson (2004) define four distinctive 'framework measures': economies of scale, complexity costs of producing different subassemblies at the same plant, transportation costs, and tariffs.

The **economies of scale** measure the break-even volume as a percentage of annual worldwide demand, assuming all subassemblies produced at a single plant while ignoring complexity costs. It can be assumed that important economies of scale will push the firm towards concentrated network dispersion, a dedicated plant focus and a global market focus. A high level of minimum efficient scale, as represented in Figure 5, will force the firm to concentrate a large share of its activities. This should be helped by low shipping cost. The average unit costs reach their minimum at a high production level so production will be highly centralized in order to reap the scale economies. In Figure 6, there are high shipping costs per unit whereas the production unit costs show a steep decline. As a result, the unit costs already a show minimum level at a low production volume. Consequently, production will be scattered across markets.

Figure 5 High minimum efficient scale production levels

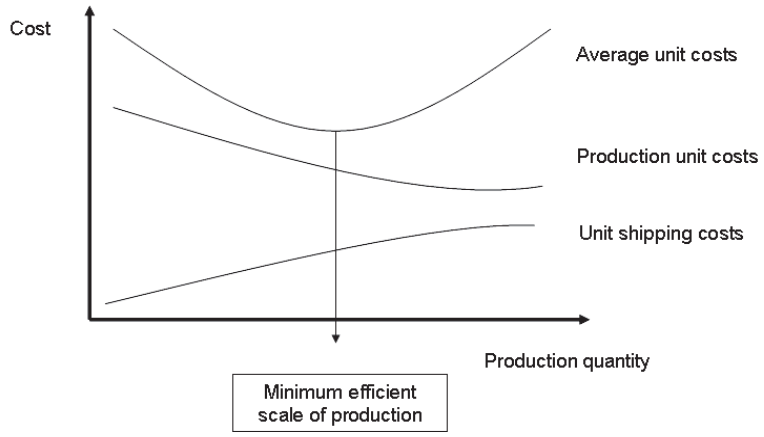
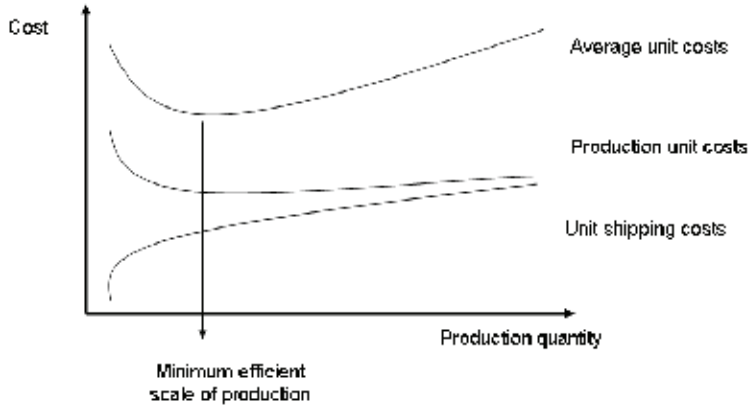


Figure 6 Low minimum efficient scale production levels



The **complexity measure** points at the ratio of costs of producing two subassemblies at one plant vs. two subassemblies at two different plants. High costs will incur a dedicated plant focus. The **transportation measure** calculates the distance-related transportation costs, expressed as a percentage of gross margin. In case this is a considerable percentage, the market focus of the different plants will be regional. High **tariffs** will force the firm to produce in and for a local market.

3.2 Outsourcing : Benefits and risks

In search for an optimal system configuration, some activities will be outsourced. This will depend on the nature of the activity (core or non-core), the own resources, the incurred transaction costs and some strategic aspects.

Traditionally, firms internalise those value-chain activities that they consider as core competences. This results from the fact that these processes often rely on trade secrets and proprietary knowledge which they want to control. Non-core activities, which can be obtained at a lower cost or can be provided by specialised suppliers, tend to be outsourced.

Moreover, firms with a lack of sufficient knowledge or capital regarding certain activities will be forced to outsource these activities. Under those circumstances, specialised firms can offer a better product at lower costs.

Outsourcing creates transaction costs. These costs arise from search and information costs (which supplier offers the best price, offers an acceptable quality level, etc.), bargaining costs (the costs required to come to an acceptable agreement) and policing and enforcement costs (which make sure that the other party will stick to the terms of the contract). In case the transaction cost are too high (if the eventual lower costs of the product will be offset by the high transaction costs), firms will internalise the process.
From a strategic point of view it can be dangerous to externalize activities. If the firm shares intellectual property and business process knowledge with suppliers, it also bears a risk of creating future rivals. As a result, core functions and strategic sensitive parts of the firm remain internalised.

A global supply chain where firms rely for non-core activities on external partners can generate a lot of advantages. It allows the firm to concentrate on its core activities and share the risk of less essential activities. By partnering with efficient suppliers the firm can benefit from lower costs, expanded sales, etc. which ultimately lead to higher profits.

However, global sourcing often involves unexpected complications. In fact, studies reveal that as many as half of all outsourcing arrangements are terminated earlier than planned (Cavusgil et all., 2006).

Less-than-expected costs savings are due to the fact that international transactions are often more costly and complex than expected. Furthermore, conflicts and misunderstandings arise because of differences in culture. **Environmental factors** such as exchange rate fluctuations, labour strikes, adverse macroeconomic events, high tariffs and other trade barriers, high energy and transportation costs, etc. can have a negative influence on the success. Low cost countries are often characterised by poor infrastructure which often needs to be improved. Also the location near large cities, in order to attract sufficient skilled labour, can be more costly than presumed. **A weak legal environment** (weak laws and enforcement regarding intellectual property protection for example) can lead to the erosion of key strategic assets. Local operations can also be complicated by inadequate legal systems, red tape, convoluted tax systems and complex business regulations. **The risk of creating competitors** has been mentioned before. By sharing intellectual property and business process knowledge, a future rival can be created. **Inadequate or low-skilled workers** can lead to production shortages or low quality of service. **Over-reliance on suppliers** can lead to serious problems as the firm can lose control of important value chain tasks. Therefore, an appropriate balance of power between the firm and foreign suppliers is an essential condition in creating successful partnerships.

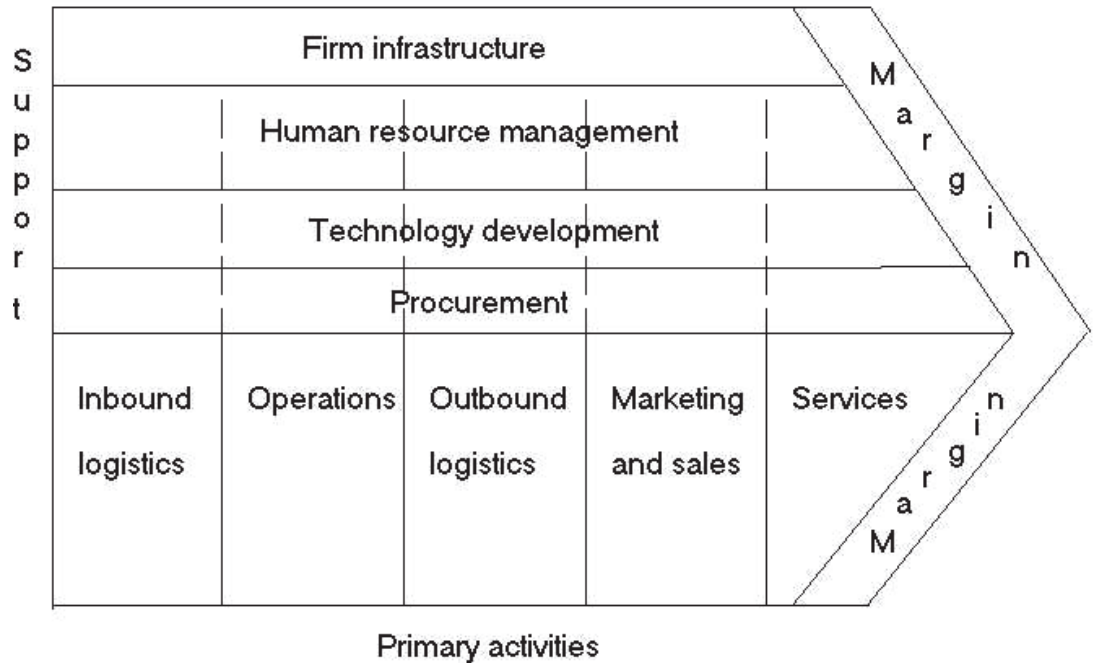
In the past, many international firms concentrated their activities in the home country and exported from there to other countries (export strategy). Alternatively, they replicated all the activities in other countries (multidomestic strategy). As a result of economic liberalisation and helped by the IT-revolutions, firms have changed location policies. They now try to generate advantages or generate cost benefits by spreading activities belonging to their value chain across different countries.

4.1 An introduction to the value chain

The value chain concept was originally developed by Michael Porter in his best-selling book *"Competitive advantage: creating and sustaining superior performance".* It is a useful tool which disaggregates a firm into its strategically relevant activities and helps to understand the behaviour of costs and the existing and potential sources of differentiation (Porter, 1998).

Following the value chain concept, a firm can be seen as a collection of activities which are performed to design, produce, market, deliver and support its products (see Figure 7). The relevant unit of analysis for the construction of a value chain is a firm's activities in a particular industry.

Figure 7 The Value Chain



Source: Porter (1998)

As shown in Figure 7, the value chain is a combination of two main groups of activities: the primary activities and the supporting activities.
Primary activities are the activities involved with the physical creation of the product and its sale and transfer to the buyer as well as after-sale assistance. Support activities support the primary activities and each other by providing purchased inputs, technology, human resources and various firm wide functions (Porter, 1998). The dotted lines within the supporting activities reflect the fact that procurement, technology development and human resource management can be associated with specific primary activities as well as supporting the entire chain.
Within the primary activities, a distinction is made between the inbound logistics, operations, outbound logistics, marketing and sales and services. Although these activities are present in each firm, this does not imply that the firm necessarily organizes these activities itself. Some activities can be outsourced to other firms.

Within the support activities, a distinction is made between the firm's infrastructure and the firm's administrative functions, the human resources management, the technological developments and the firm's R&D and the firm's procurement (the activities which involve the fine-tuning of the firm's total cost of ownership and related purchasing activities). A separation between the separate value chain activities means that the activities are technologically and strategically distinct.

4.2 Global location trends

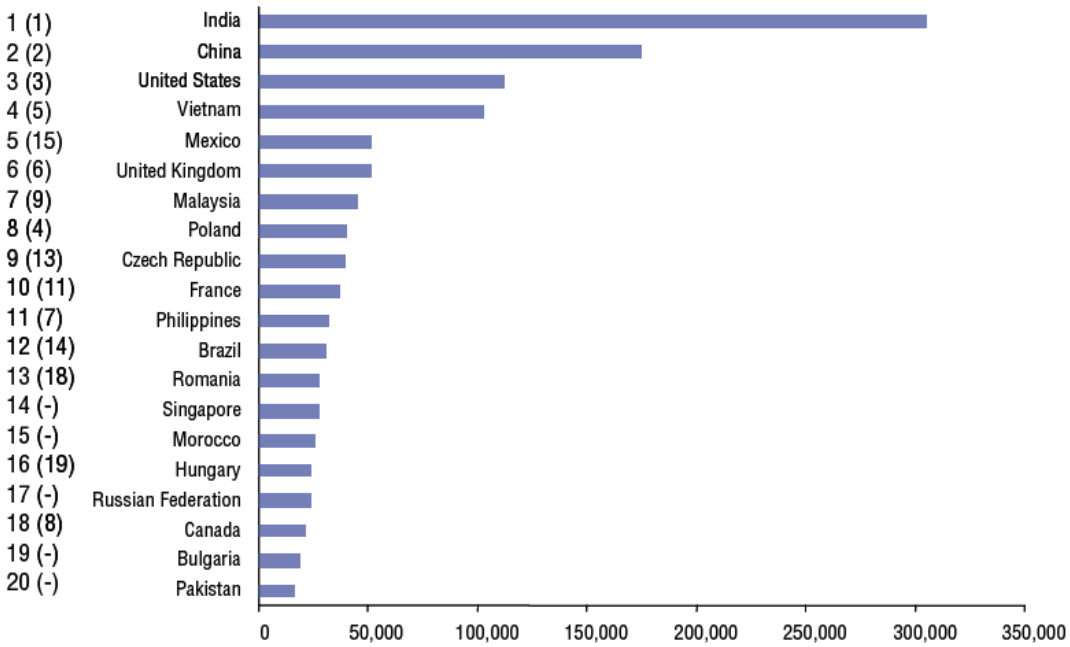
4.2.1 Overview

The presented analysis is based on the IBM Global location trends annual report 2006. The figures are based on the Global Investment Location Database (GILD) which monitors corporate investments at the project level. The figures represent greenfield and expansion investments; M&As are excluded.

In 2006, some 10.500 foreign investment projects were decided which created over 1.5 million new jobs around the world. Compared to the previous year, approximately 20% more jobs were created. The concentration of investment declined as 73% of all jobs were created in the top 15 locations of 2006 whereas this figure equalled 85% in 2005.

India seems to be most successful in attracting new FDI projects measured in job creation; over 300.000 new jobs were created in 2006. China is listed second with over 175.000 jobs followed by the United States (approximately 125.000 jobs) and Vietnam (over 100.000 jobs). The position of the top three countries is comparable to 2005. Vietnam emerges as a key location. Also Romania, Morocco, Bulgaria and Pakistan became more attractive for international investment.

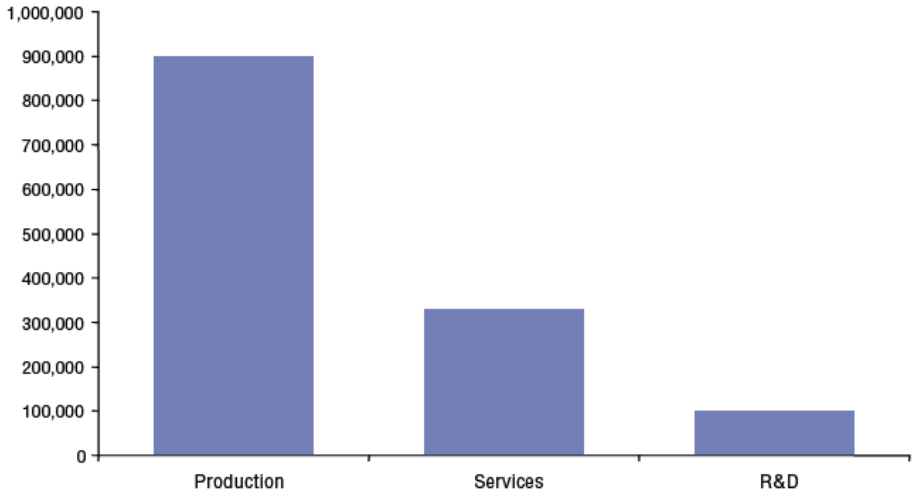
Figure 8 Top ranking destination countries by estimated jobs - 2006



Source: IBM Global location trends annual report 2006

It is clear that investment projects differ by business function. Production, measured by jobs created, was by far the most FDI intensive business function. It accounted for about 900.000 new jobs in 2006 whereas services accounted for 350.000 new jobs and R&D for about 100.000 new jobs. The fact that the share of R&D is relatively small compared to the other functions can partly be explained by the size of activity and by the fact that the globalization of R&D activities is a more recent phenomenon. However, compared to 2005, job creation by FDI in R&D rose by almost 40%.

Figure 9 Job creation by business function - 2006

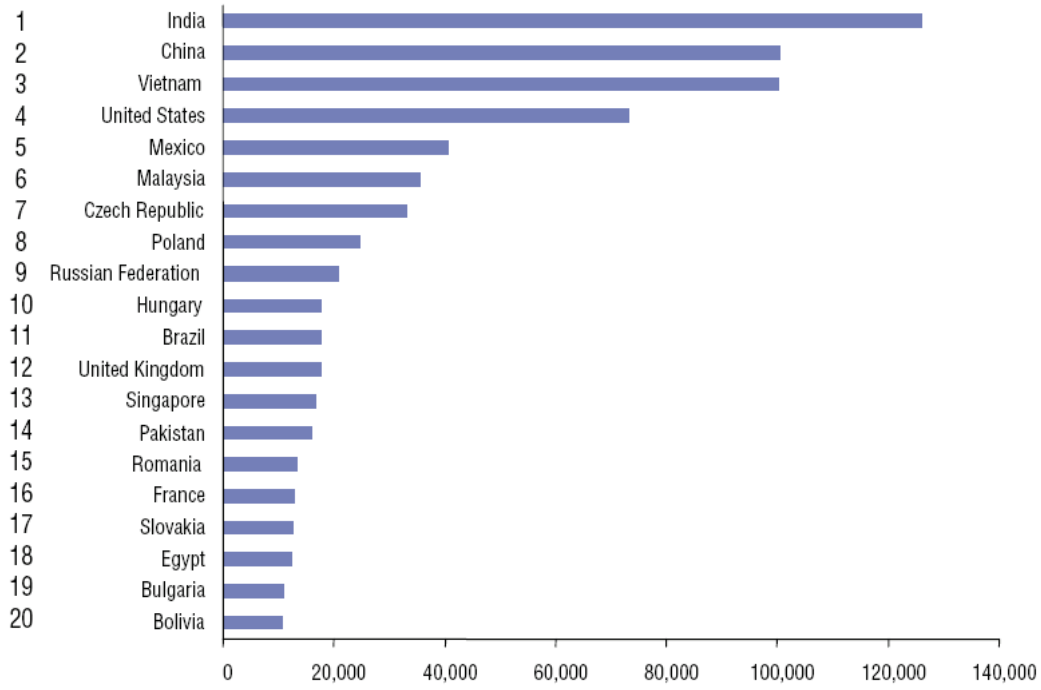


Source: IBM Global location trends annual report 2006

4.2.2 Production

Firms in search for new production facilities often start up new plants in emerging economies such as India, China and Vietnam. In 2006, over 120.000 new jobs in production were created in India and about 100.000 jobs in China and Vietnam. Other main destination countries in terms of job creation were the United States, Mexico, Malaysia and Czech Republic. It should be noted that there was a lower concentration of investment location within the top countries compared to the year before. Apparently, investors broadened their scope of location choices.

Figure 10 Estimated jobs in production created by FDI – 2006

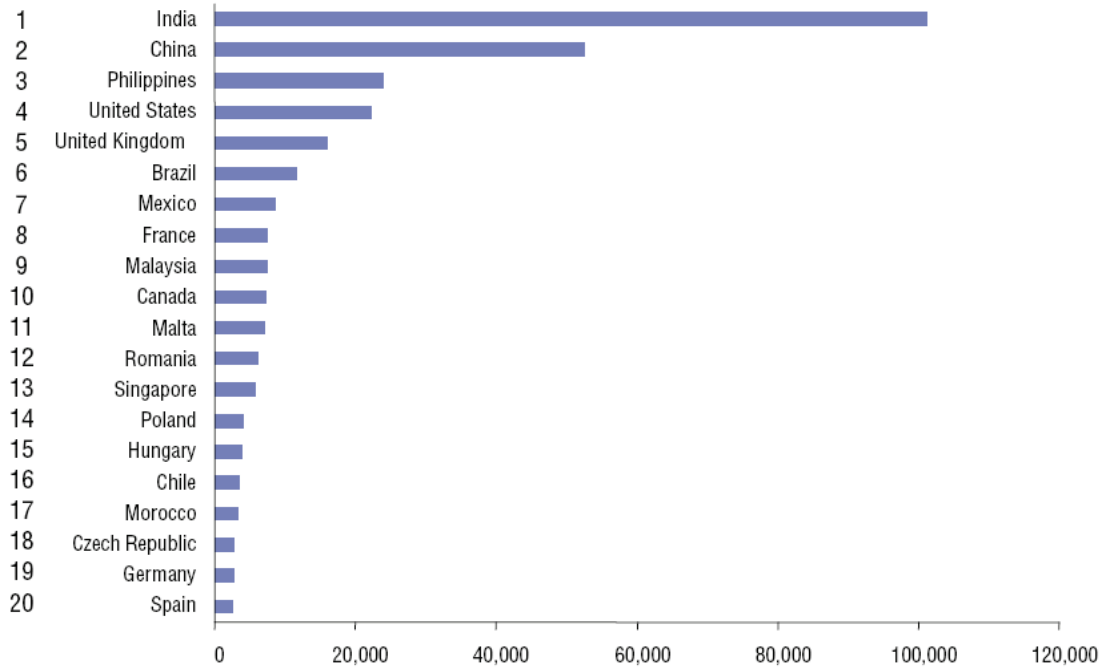


Source: IBM Global location trends annual report 2006

4.2.3 Services

India is not only top ranked as the destination of FDI in production, it is also ranked highest for services. India (with the creation of over 100.000 jobs) and China (over 50.000 jobs) are far ahead of other countries such as the Philippines and the United States (over 20.000 jobs) and the United Kingdom (almost 20.000 jobs).

Figure 11 Estimated jobs in services created by FDI – 2006

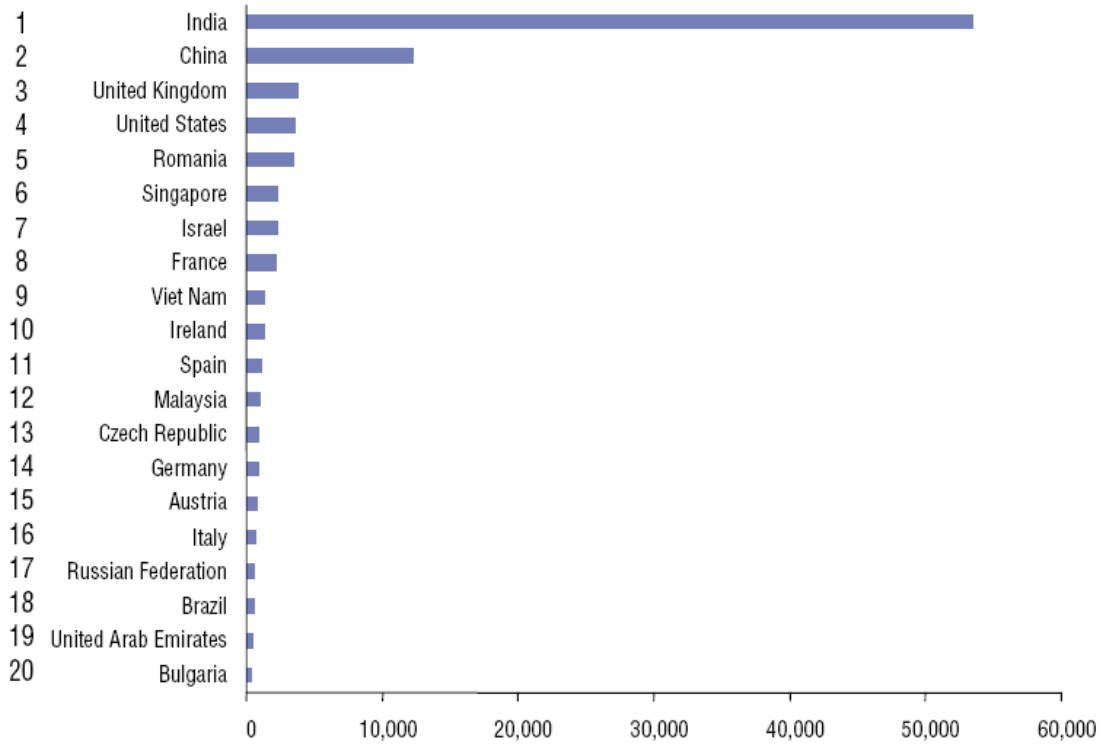


Source: IBM Global location trends annual report 2006

4.2.4 R&D

India is also top ranked measured by the creation of new jobs by FDI in R&D with about 55.000 new jobs created in 2006. This figure amounts to about five times the number of jobs created in China (over 10.000 jobs) and ten times the number of jobs created in the United Kingdom (less than 5.000 jobs).

Figure 12 Estimated jobs in R&D created by FDI – 2006



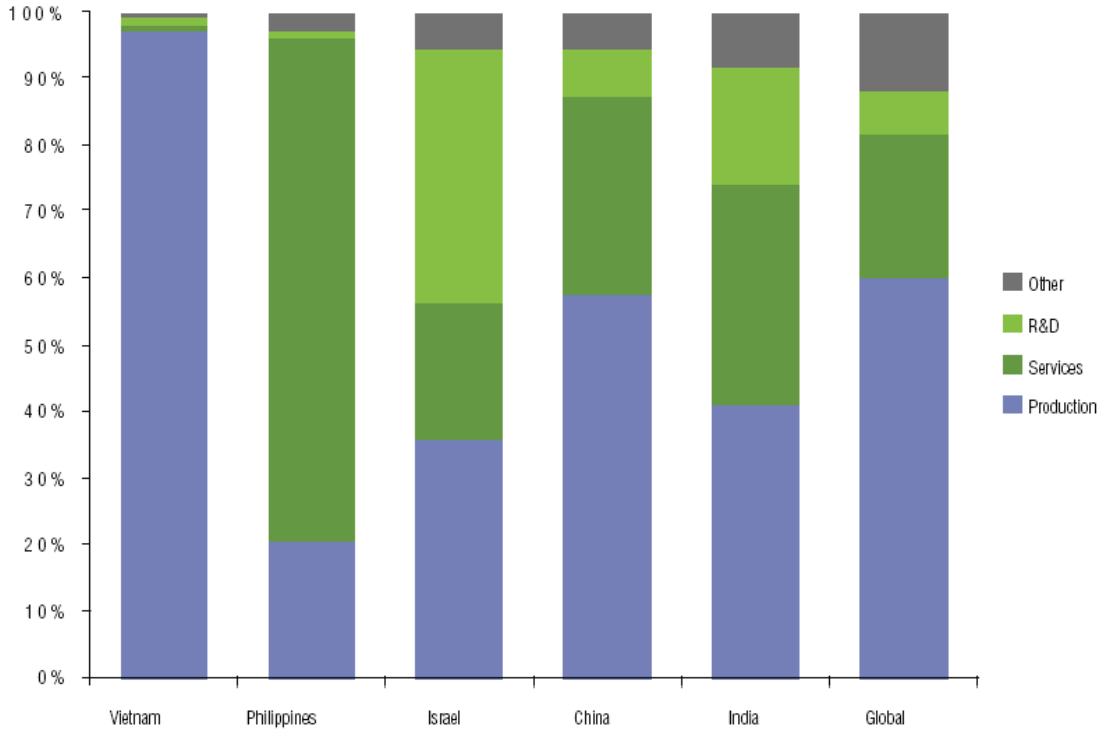
Source: IBM Global location trends annual report 2006

4.2.5 Towards specialisation

The investment data indicate that there is a new trend in the location of business functions. Whereas countries previously attracted the complete value chain, they now attract specific business functions or activities. Moreover, smaller countries are more specialised while large countries are characterised by a more balanced portfolio in terms of job creation by means of FDI investments.

Take Vietnam, the Philippines, Israel, China and India as an example. Vietnam is characterised by an impressive (over 95%) concentration of FDI-created jobs in production whereas the Philippines is very successful in the attraction of jobs in the services sector. Israel has been able to focus on R&D whereas China and India are characterised by a more equilibrated portfolio of functions.

Figure 13 Specialisation by business function - 2006



Source: IBM Global location trends annual report 2006

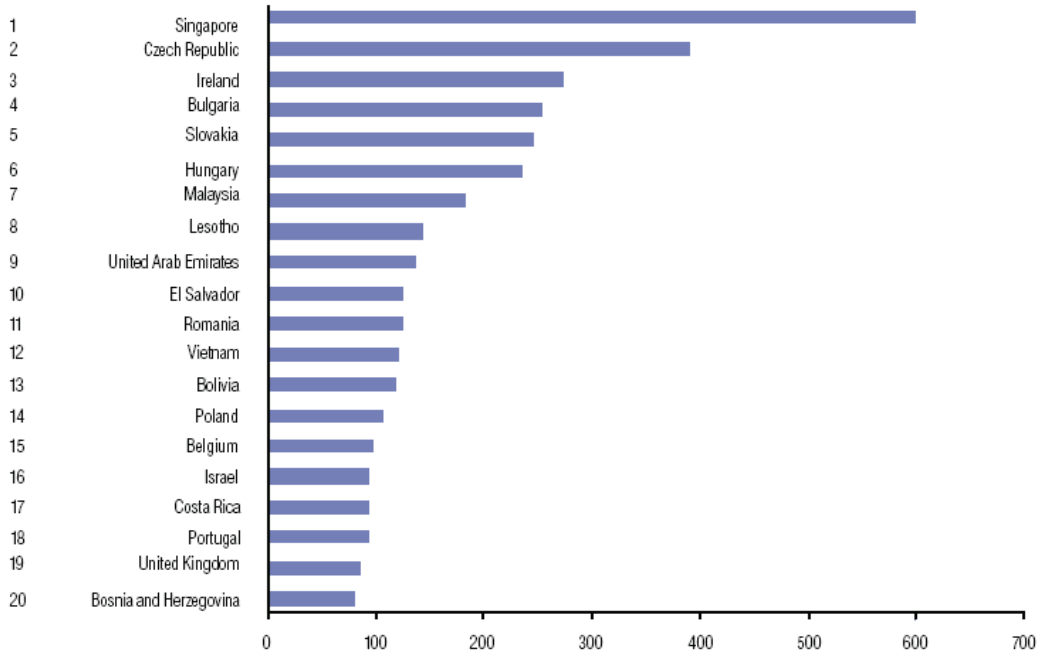
4.3 Focus on Belgium

4.3.1 General overview

Belgium enjoyed a record year for foreign investments in 2006. A stunning 216 new investment projects were initialized which were responsible for the creation of almost 10.000 new jobs.

Whereas Belgium was not mentioned in the previous section concerning global trends, Belgium is ranked 15th in the number of created jobs per 100.000 inhabitants. This also implies a second position within Western Europe after Ireland. Singapore had the largest job creation per 100.000 inhabitants (over 600) followed by the Czech Republic (almost 400) and Ireland (over 275). There were almost 100 new jobs created by FDI per 100.000 inhabitants in Belgium.

Figure 14 Total estimated job creation per 100.000 inhabitants worldwide - 2006

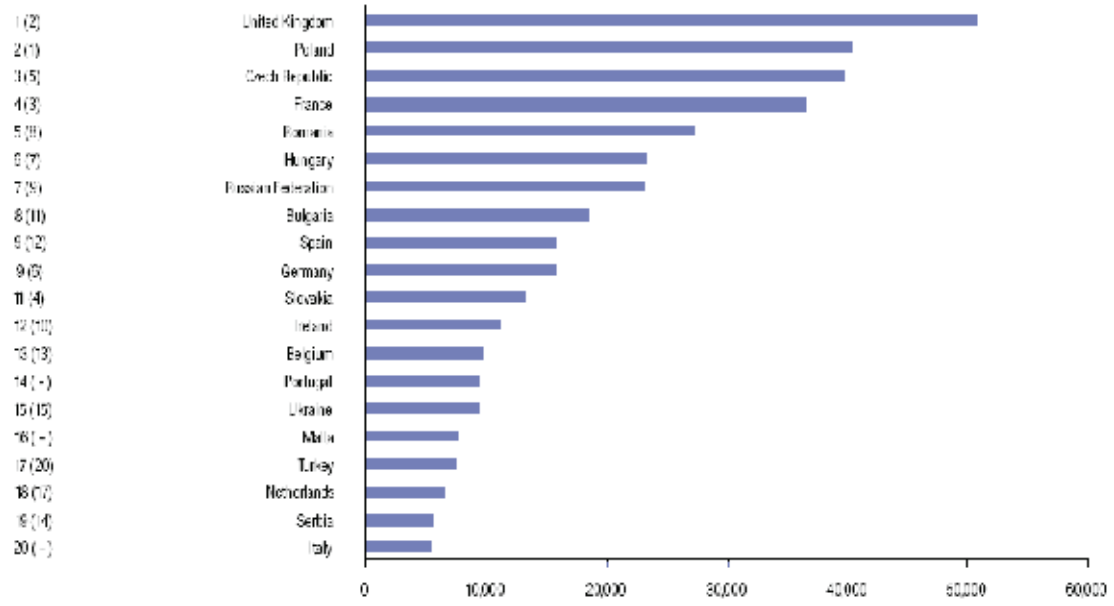


Source: IBM Global location trends annual report 2006

In benchmarking Belgium with other European countries, Belgium ranks 13th out of 20 in absolute number of created jobs. In 2006, approximately 10.000 new jobs were created. The United Kingdom is on top of the ranking and changed positions compared to the year before with Poland. In the UK, over 50.000 jobs were created whereas this figure amounted to about 40.000 in Poland. Looking to Belgium's neighbour countries, France ranked 4th (over 35.000 jobs) and Germany 9th (over 15.000 jobs). The Netherlands occupied in 2006 the 18th position (over 5.000 new jobs).

Belgium was ranked 4th in Europe in number of new projects by FDI investments, with 216 new projects in 2006. Over 1.000 new projects were started in the United Kingdom which made them top ranked, ahead of France (almost 800 new projects) and Germany (over 200 new projects).

Figure 15 Top destination countries in Europe by estimated jobs - 2006



Source: IBM Global location trends annual report 2006

4.3.2 Focus on business activities

From a European perspective, Belgium attracted 3% of all jobs created in production. Compared to our neighbour countries, France received 5% of production jobs and Germany 4%. The share of the Netherlands was smaller and grouped in 'others'. Most jobs within production were created in the Czech Republic (14%) followed by Poland (10%).

Belgium attracted 2% of all services jobs created in Europe. France held a share of 11% whereas Germany and The Netherlands attracted both 4% of those jobs. Most successful was the United Kingdom (24%) followed by France (11%) and Malta (10%).

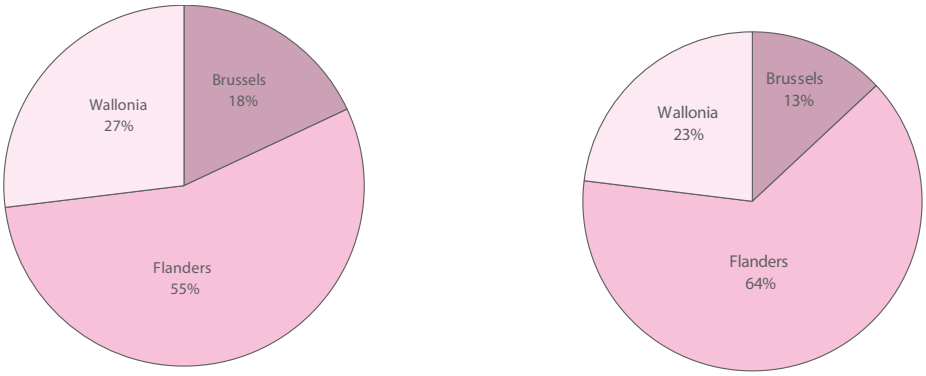
Quite surprisingly, Belgium was not listed for R&D as main receiver of investments. Measured by jobs created, the United Kingdom attracted 20% of R&D jobs followed by Romania (19%) and France (12%). Germany attracted 5% of those jobs. Belgium is listed together with the Netherlands and some other countries in the group 'others' (6%).

4.3.3 Regional differences

Of all new projects in Belgium in 2006, 55% (or 119) were located in Flanders, 27% in Wallonia and 18% in Brussels. Also measured in number of created jobs, Flanders is on top of the regions within Belgium. It attracted 64% of all new jobs whereas Wallonia held a share of 23% and Brussels of 13%. Compared to the previous year, Flanders and Wallonia reported a strong increase both in number of projects and in number of jobs created whereas Brussels saw a slight reduction in both figures compared to 2005.

In general, the numbers of investment projects in Belgium tend to rise but they become smaller in terms of created jobs.

Figure 16 Number of investment projects by region and by estimated jobs – 2006

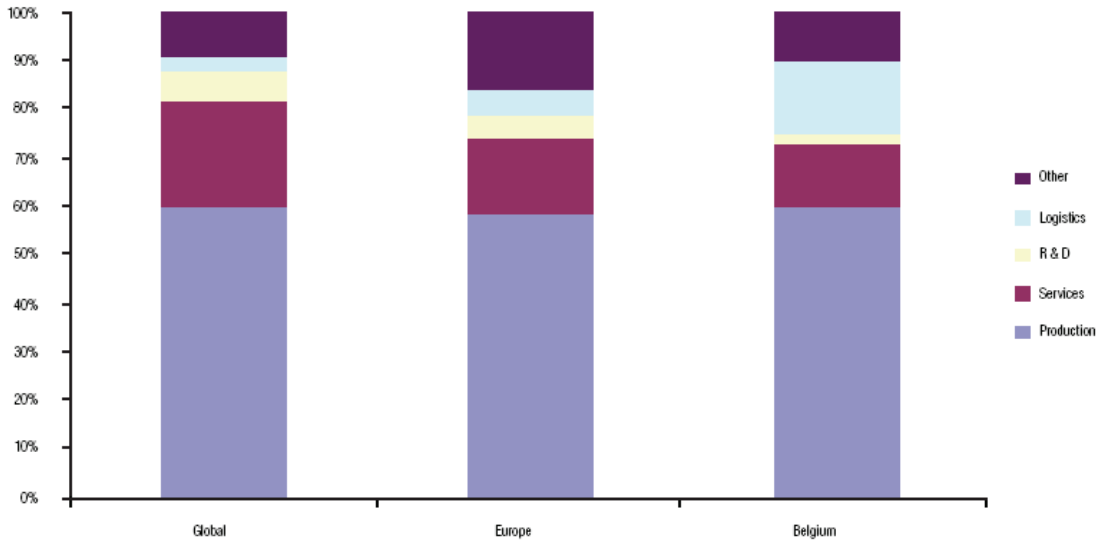


Source: IBM Global location trends annual report - 2006

4.3.4 Activity specialisation

Belgium performed badly in attracting R&D activities. Even stronger, the share of jobs created in R&D and services were below the European and even the worldwide average. Furthermore, it seems that about 60% of all jobs were created in production. This is just above the European average and about the same of the global average. The logistic industries were on the other hand able to attract a larger share of all jobs created by FDI compared to the European and global average.

Figure 17 Job creation by business function - 2006

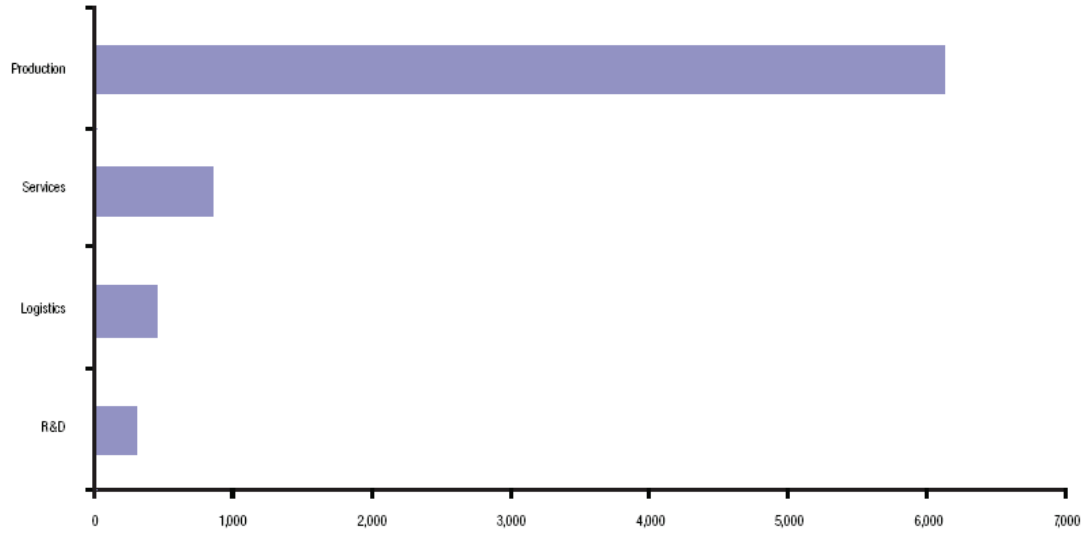


Source: IBM Global location trends annual report 2006

4.3.5 Outward investments by Belgian firms

Of all foreign jobs created by Belgian firms by outward investment last year, most jobs were created in production. This is a quite surprising finding. It is also clear that most jobs sourced out to another country are jobs within production (over 6.000 jobs). The outsourcing of services (with almost 1.000 jobs) is lagging far behind from this perspective. Logistics and R&D play an even smaller role in Belgium's outward investment measured by created jobs.

Figure 18 Job creation by Belgian outward investors per business function - 2006

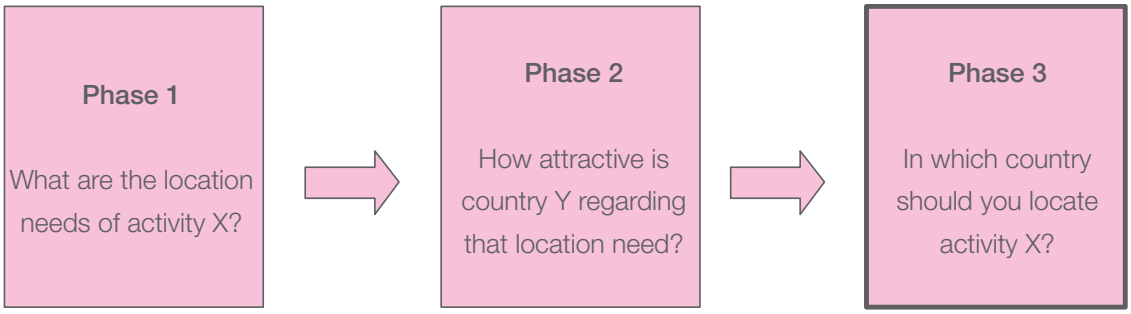


Source: IBM Global location trends annual report - 2006

Following the presentation of recent FDI trends, the second part of the report consists of a further analysis of these trends. As activities are increasingly spread across countries, a detailed location analysis is done at the level of the different activities. This analysis identifies the location determinants of the different activities (phase 1), the subsequent attractiveness of each country in terms of those location factors (phase 2) and finally the attractiveness of a country for the different activities. Subsequently, a benchmark analysis is carried out where the relative attractiveness of different countries for the different activities is compared (phase 3).

The method of finding a suitable location for a particular activity can be represented as in Figure 19.

Figure 19 The investment location decision



Location determinants differ across activities of the value chain. Therefore, a thorough analysis of the specific location needs by activity is necessary.

The outcome of this analysis results from a mix of interviews with top consultants of global location services and an in-depth literature study.

Starting from a very extensive list of location factors, experts expressed the relative importance of each factor for a specific activity according to the scale in table 2.

Tabel 2 The relative importance of location factors

Relative importance
Not important
Rather important
Very important
Major constraint

The location decision analysis has been prepared for seven distinctive value chain activities: R&D centres, financial centres, administrative centres, logistic centres, manufacturing plants, distribution centres and the after sales services.

1.1 R&D activities

The major constraints in the location decisions are the availability of skilled labour (especially the availability of scientists and engineers) and its cost: the compensation level of services workers. Although firms often fly in top scientists to the new unit, a solid base of local skilled people is required. Furthermore, the intellectual property protection must be assured and the latest technologies need to be available.
Among the very important factors for the location of R&D facilities, general stability on the one hand and a suitable workforce on the other hand should be noted.
Other important factors include the need of a low risk environment, other labour related requirements (e.g. flexible labour laws), government related issues (such as policy consistency, the existence of a fine legal framework, transparency in the policy making), tax issues and other research factors (innovative capacity of local firms, quality of research institutions,…).

1.2 Financial centre activities

The major constraints in the location decision of financial centres are the availability of skilled labour, the compensation level of services workers, the total employment level (which is an indication for the available workforce), and the availability of financial skills. Furthermore, the strength of auditing and reporting standards plays a crucial role. The tax system plays also a vital role: the extent and effect of

taxation are major constraints. The financial market sophistication and the free movement of capital flows are also of major importance in the location decision of a financial centre.

Among the very important factors, we count the risk factors (operational, political, investment and financial risks), employment factors, regulatory issues (the legal framework, burden of regulations, absence of trade barriers) and other infrastructural factors.

1.3 Administrative centre activities

The major constraints in the location decision of an administrative centre are related to staffing and human resources. The level of total employment (as an indicator of the availability of employees), the compensation level of services workers and the availability of skilled labour and language skills are equally important.
The availability of an appropriate labour pool is also considered a very important factor. Administrative centres are in need of: high standards of quality of life, investment stability (low operational and investment risk), a strong regulatory framework combined with policy consistency, transparency of government policy making, tax issues and an appropriate infrastructure.

1.4 Logistics activities

Logistics activities require a large foreign market size, competitive compensation levels of workers, high productivity rates, no trade barriers, good infrastructure (port and air facilities) and a highly trained labour force.

Other important factors include mainly a low risk environment, a high participation rate in the educational system, flexible labour laws and wage determination, low non-wage labour costs and firing costs, low tax rates and high quality suppliers, i.e. a high state of cluster development.

1.5 Manufacturing activities

As the ‘manufacturing activities’ reflect a broad range of different types of manufacturing, a distinction has to be made. Therefore, labour intensive, capital intensive and skill intensive manufacturing activities will be treated separately after the general needs of manufacturing activities will be addressed.

The constraining location determinants for the overall manufacturing activities are the compensation levels of manufacturing workers and the availability of sufficient workers. Also labour law and the pay and productivity levels are important factors. Additionally, firms will pay attention to the tax rates, the absence of trade barriers, the availability of suppliers (both in quantity and quality) and the quality of infrastructure (mainly roads and ports).
Other critical factors are the risk factors (operational, political, investment and financial risk), the market size (both domestically and foreign), growth of the market (seen as the real GDP growth), the educational participation, the quality of education and the investments incentives (especially capital grants).

1.5.1 Labour intensive manufacturing

Labour intensive manufacturing activities are particularly in need of a large workforce (which will be measured by the total employment) at a reasonable price (measured by the compensation level of manufacturing workers). The relation between low wages and high production levels results in the need for high productivity rates. Also the nonexistence of trade barriers plays an important role as the products need to find their way to the enduser after production.

1.5.2 Capital intensive manufacturing

Capital intensive manufacturing activities need to be produced in a location with a high demand. Therefore, the domestic market size and the foreign market size are of major importance. The absence of trade barriers and infrastructure (especially the road and port infrastructure) are equally important.

1.5.3 Skill intensive manufacturing

Skill intensive manufacturing activities require principally a highly skilled labour force (reflected in the importance of the factors availability of skilled labour and also the availability of scientists and engineers) at a reasonable price (the compensation level of services workers). The quality of the education system and the absence of trade barriers are the other main important location factors.

1.6 Distribution activities

Distribution activities are especially in need of a large domestic market size which grows at a fast pace. Also the compensation level of the employees (especially low skilled employees) and the flexibility of labour regulations are of major importance. Furthermore, location decisions will be mainly influenced by the quality of the roads.

Other very important factors include risk factors (operational, investment and financial risk), the foreign market size and employment issues (total employment, the participation in secondary education, the cooperation in labour-employer relations, the flexibility of wage determination and the productivity levels). Trade barriers, the intensity of local competition and the quality of air transport infrastructure also play an important role.

1.7 After sales services

After sales services require a good pool of human resources at a reasonable cost and which possess the necessary language skills. Also flexible labour laws and a low burden of regulations are major factors for after sales services.

Other important factors include the risk factors (operational and investment risks), a good educational system (quality and participation level), labour costs (non-wage and productivity level), regulatory issues (legal framework, burden of government regulation, tax rates) and infrastructure (air transport and office rent).

From a firm's perspective, deciding on the location choice of a specific activity necessitates a benchmarking exercise of suitable locations. Matching the specific location needs of the activity with country characteristics, the firm will decide on the most appropriate country to invest. Although the optimal location usually does not exist, a firm must try to find an optimal balance of location advantages (De Meirleir, 2006).

The benchmarking is considering nine areas of location factors: general factors; market size; quality, efficiency and flexibility of the labour market; government and public institutions; fiscal legislation; financial markets; local market factors; quality of infrastructure and technology development.

Data on these factors were collected from reports of the Economist Intelligence Unit, reports from the World Bank, IMD's World Competitiveness Yearbook 2008 and the World Economic Forum's Global Competitiveness Report 2007-2008. Each factor has been rescaled following an ordinal scale ranging 1 to 7 scale (with 1=worst performing country, 7= best performing country).

The countries included in the benchmarking are the following:

Belgium	
The Netherlands Germany France UK	Neighbour countries
Ireland Czech Republic Sweden Hungary Poland	Other European countries
USA	
China India Brazil	BRIC countries (except Russia)
South Africa Australia	

2.1 General factors

The ‘general factors’ that are important in the location choice include the quality of life of the country, the operational risk to which the plant will be exposed, the political stability and investment risk of the country.

The best performing country is Sweden. It has an excellent quality of life and a low exposure to investment risk. Also The Netherlands score excellent on every factor whereas Ireland and Singapore both have an average score. Belgium is moderately attractive as it scores average on every factor. This is also true for Germany, France, Czech Republic, Hungary, Poland, China and South Africa. India and Brazil are the least attractive countries on the factors. They score especially low on investment risk whereas India also has a general very low score on political stability.

Table 3 Country attractiveness for the general factors

Least attractive	Average	Most attractive
India Brazil	Belgium Germany France UK USA Czech Republic Hungary Poland China South Africa	Sweden The Netherlands Ireland Singapore Australia

2.2 Market size

The market size indicators point at the domestic market size of a country, its foreign market size and the real GDP growth.

Double digit growth markets, such as China and India, are very attractive from a market size perspective. They both score excellent on this factor. Small and highly developed countries, such as Belgium, score low on domestic market size and especially on real GDP growth. However, they score higher on the size of the foreign market.

Table 4 Country attractiveness for market size factors

Least attractive	Average	Most attractive
Sweden Hungary Belgium Germany	Ireland Czech Republic Poland Brazil South Africa Australia The Netherlands	China India Singapore UK USA France

2.3 Quality, efficiency and flexibility of the labour market

An overall score for the labour market is not appropriate. A distinction between the 'price aspect' and the 'quality aspect' of labour has to be made.

In general, countries which are scoring high on the price aspect (compensation level of manufacturing workers, compensation level of services workers, etc.) are less appealing from the quality aspect (availability of skilled labour, availability of finance skills, quality of educational systems, etc.).

The countries which are price attractive include China, India and Brazil. Medium attractive countries are Czech Republic, Hungary, Poland, Singapore and South Africa. The least attractive countries are Belgium, the Netherlands, Germany, Ireland and the UK.

Attractive countries on the quality level are Belgium, the Netherlands, Germany, Sweden, Ireland, the USA and especially Singapore. However, Belgium, the Netherlands, Germany and the UK face an average attractiveness on the availability of skilled labour and finance skills.

Other aspects of the labour market include total employment (for which especially the USA, China, India, Brazil but also Germany are attractive), the cooperation in labour-employer relations (for which the Netherlands are very attractive but also Sweden and Singapore) and the relation between pay and productivity (for which Czech Republic, the USA, China and Singapore are very attractive).

2.4 Government and public institutions

The 'government and public institutions' location factors relate to policy consistency of the government, the legal and regulatory framework, the investment incentives, the burden of government regulations, the transparency of government policy making, the intellectual property (IP) protection, the judicial independence and the strength of the auditing and reporting standards.

Singapore scores a maximum of 7 on every sub factor which proves clearly the strength of its institutions. Also Australia scores very high. It is followed by Ireland and the Netherlands. Belgium scores average. It has high scores on its IP protection and auditing and reporting standards but scores very poor on policy consistency of the government. Poland, France, Czech Republic and Brazil all score weakly by regarding the legal and regulatory and for the burden of government regulations.

Table 5 Country attractiveness on government and public institutions factors

Least attractive	Average	Most attractive
Poland	Belgium	Singapore
France	UK	Australia
Czech Republic	Hungary	Ireland
Brazil	USA	The Netherlands
	China	Germany
	India	Sweden
	South Africa	

2.5 Fiscal legislation

An analysis of the fiscal legislation includes a breakdown of the extent and effect of taxation, the total tax rate, the corporate tax rate on profit and the common use of trade barriers.

Belgium scores among the weakest on the extent and effect of taxation. This factor suggests that the tax rate significantly limits the incentives to work or invest. It is also lowest ranked for the tax rate on corporate profits. However, on the nonexistence of trade barriers, Belgium scores among the best. Low scores were also found for India, France, Sweden, Brazil and Germany. The most attractive countries were Ireland and Singapore by scoring remarkably high on every sub criterion.

Table 6 Country attractiveness on fiscal legislation factors

Least attractive	Average	Most attractive
Belgium	The Netherlands	Ireland
India	UK	Singapore
France	South Africa	China
Sweden	Australia	
Brazil	Poland	
Germany	Czech Republic	
	Hungary	
	USA	

2.6 Financial markets

The financial market location factors concern the financial market sophistication, the ease of access to loans, the availability of venture capital, the free movements of capital flows and the cost of capital.

Belgium is averagely attractive from a financial market point of view. It scores very well on the financial market sophistication and on the free movement of capital flows. The scores are around the average on all the other factors. Singapore scores excellent on each factor whereas the Netherlands, Germany, the UK, Ireland and Sweden, except for the cost of capital, score excellent on every sub factor.

The least attractive countries score very low on the free movement of capital flows (China, Brazil and South Africa) and on the cost of capital (Poland, Brazil and South Africa).

Table 7 Country attractiveness on financial market factors

Least attractive	Average	Most attractive
Brazil South Africa	Belgium France Australia Czech Republic Hungary China Poland India	Singapore The Netherlands Germany Ireland UK Sweden USA

2.7 Local market factors

The local market factors concern the local supplier quantity and quality, the intensity of local competition, and the state of cluster development.

Germany scores high on every topic which makes it, from a local market perspective, the most attractive country. Also The Netherlands, Sweden and the USA score very high on every factor. Belgium receives the highest score on every factor, except for the cluster development which receives a medium score.

The least attractive countries still score average on every factor. In the benchmarking, they become, however, the least attractive locations.

Table 8 Country attractiveness on local market factors

Least attractive	Average	Most attractive
Brazil South Africa China Poland	Ireland India Australia Singapore Czech Republic Hungary	Germany The Netherlands Sweden USA Belgium France UK

2.8 Quality of infrastructure

The quality of infrastructure considers the quality of roads, port infrastructure and air transport infrastructure, and office rent prices.
Singapore is again the best performing country. It scores ‘excellent’ on every factor, except office rent. The USA, Belgium, the Netherlands, Germany, France and Sweden are doing better on the last factor.

Brazil scores average on every topic except for port infrastructure where it scores very low. Ireland scores intermediate on all sub factors, except for office rent were it scores very poor as renting offices is very expensive.

Table 9 Country attractiveness on the quality of infrastructure

Least attractive	Average	Most attractive
Brazil	UK	Singapore
Ireland	Australia	USA
Hungary	South Africa	Belgium
India	Czech Republic	The Netherlands
Poland	China	Germany
		France
		Sweden

2.9 Technology development

The technology development factor relates to the availability of the latest technologies, the innovative capacity of the local firms, the quality of the scientific research institutions, the strength of the university-industry research collaborations and the availability of scientists and engineers.

Sweden scores excellent on every sub factor which makes Sweden, from a technology point of view, the most attractive country. Also the USA, Belgium and Germany score very high on all sub criteria.

The least attractive countries are in the average range on all sub factors.

Table 10 Country attractiveness on technology developments

Least attractive	Average	Most attractive
Brazil	Ireland	Sweden
China	Australia	USA
Poland	India	Belgium
South Africa	Czech Republic	Germany
	Hungary	France
		The Netherlands
		UK
		Singapore

As loction decisions are typically based on the attractiveness of the most vital location factors, our attractiveness analysis has been restricted to the 'very important factors' and the 'major constraints' factors for each activity. After listing these factors and the scores for this factor per country, a weighted value of attractiveness for each activity by country has been calculated. The 'very important factors' have been given a weight equal to 30% whereas the major constraints have been given a weight equal to 70% in the total score

For each activity we have calculated by country its overall attractiveness score (as represented in appendix I). Additionally we provide below a short positioning of Belgium for the different activities according to its score on the major location factors, in comparison with the neighbour countries. If a neighbour country performs better than Belgium, on a 1-7 scale, it has been marked red (pronouncing Belgium's relative unattractiveness), otherwise green in the tables presented below. In case there is no difference in attractiveness it has been marked blue.

3.1 R&D activities

Highly developed countries such as Belgium, the Netherlands, Germany, France, the UK, Ireland, Sweden, USA, Singapore and Australia are very attractive for R&D activities. These countries score also high on very important factors such as level of risk (operational, political, investment, financial), cluster development, quality of infrastructure and suppliers, and research factors (quality of scientific research institutions, university-industry research collaborations, etc.). India, as a developing country, thanks to its highly educated people, the availability of the latest technologies and its relatively low wages is also very attractive for R&D activities. China has also many good factors in attracting R&D activities but due to its weak IP protection it becomes less attractive for hosting R&D.

Low attractive countries, such as Hungary, Poland, China, Brazil, South Africa, are characterised by medium scores on the important location factors.

Belgium's weak points are the compensation level of services workers, the non-wage labour costs, the policy consistency of the government and the extent and effect of taxation. These factors are all related to costs of performing R&D in the country.

Belgium is in close competition with its neighbour countries in attracting investment projects. Except for the compensation level of services workers, for which Belgium's neighbour countries perform also very weak, Belgium scores weaker for all other major important criteria. Especially the extent and effect of taxation score, compared to the other countries, scores very poor.

Table 11 Country attractiveness for R&D activities – Belgium compared with neighbour countries

Location factor	Belgium	Netherlands	Germany	France	UK
Compensation level of services workers	2	=	=	=	=
Availability of skilled labour	4	=	-	-	+
Intellectual property protection	6	-	-	-	-
Availability of latest technology	6	=	-	=	-
Availability of scientists and engineers	6	+	=	-	+

Belgium's strong points are the quality of the educational system, the flexible labour laws and regulations, the IP protection, the supplier quality, the infrastructure and the research issues (quality of scientific research institutions, university-industry research collaborations, etc.).

In brief, Belgium should address the level of taxation and the non-wage costs. Thanks to a low risk environment and a highly educated work force, Belgium remains attractive for R&D, but with an overall score below the one of the neighbour countries.

3.2 Financial centre activities

The financial centre activities are mainly located in countries which have a solid base of highly educated workers, low tax rates and specific financial factors such as free movement of capital flows, sophistication of the financial market, etc.

Because of the high labour costs, the inflexibility of wage determination, the high non-wage labour costs, the weak policy consistency of the government and the high taxation levels, Belgium scores very weak. Among the other unattractive countries are Czech Republic and Poland (mainly due to their low availably of skilled labour and the weak regulatory framework), Brazil and South Africa.

The Netherlands, Germany, the UK, Ireland, Sweden, USA, Australia and Singapore are amongst the most attractive countries. Developing countries such as China, India and Hungary are medium attractive. The low availability of skilled labour is also one of the main reasons for their position.

Compared to the neighbour countries, Belgium should address the availably of a sufficient pool of workers, the consistency of public policies and the taxation effects.

Table 12 Country attractiveness for financial centre activities

Location factor	Belgium	Netherlands	Germany	France	UK
Total employment	3	-	-	-	-
Compensation level of services workers	2	=	=	=	=
Availability of skilled labour	4	=	-	-	+
Availability of finance skills	5	=	=	-	+
Policy consistency	2	-	-	-	-
Strength of auditing and reporting standards	6	=	-	=	-
Extent and effect of taxation	1	-	-	-	-
Total tax rate	3	=	=	=	-
Corporate tax rate on profit	1	-	-	-	-
Financial market sophistication	6	+	=	=	+
Free movement of capital flows	6	=	-	+	=

3.3 Administrative centre activities

The ranking of the most attractive locations for administrative centre activities reveals that the Netherlands, Germany, Sweden, USA, China, India, Singapore and Australia are amongst the most attractive locations. The Czech Republic, Hungary, Poland, Brazil and South Africa are the least attractive locations.

Belgium, France, the UK and Ireland are medium attractive. This is due to a weak score on very important location factors such as the compensation level of services workers, the availability of skilled labour, the flexibility of wage determination, the non-wage labour costs, the policy consistency of the government and the extent and effect of taxation.
Compared to our neighbour countries, the Netherlands and Germany score considerably higher whereas the weighted score is about the same for France and the UK. Belgium should especially improve the non-wage labour costs, the consistency of public policies and the effects of taxation. The flexible labour laws and regulations and the absence of trade barriers make Belgium attractive for administrative centre activities.

Table 13 Country attractiveness for administrative centre activities

Location factor	Belgium	Netherlands	Germany	France	UK
Total employment	3	-	-	-	-
Compensation level of services workers	2	=	=	=	=
Availability of skilled labour	4	=	-	-	+
Availability of language skills	7	=	=	-	+

3.4 Logistics activities

Belgium is amongst the most attractive countries for logistics activities. Also the Netherlands, Germany, France, UK, Sweden, the USA and Singapore rank among the most attractive countries. The least attractive countries are Hungary, Poland, China, Brazil and South Africa. This is mainly due to their medium attractiveness on most of the important location factors.
Compared to the neighbour countries, Belgium scores very well on the absence of trade barriers and the quality of roads. Also the port infrastructure is among the best in the world but this is as good as in the neighbouring countries. The quality of the air transport infrastructure is very good but the neighbour countries score better. The compensation level of manufacturing workers is very high, which is also the case for the neighbour countries. France has the lowest cost followed by the UK. As a result of the high compensation level, the pay and productivity levels are below those of Germany, France and the UK.

Table 14 Country attractiveness for logistic activities

Location factor	Belgium	Netherlands	Germany	France	UK
Foreign market size	6	=	-	-	-
Compensation level of manufacturing workers	1	=	=	-	-
Pay and productivity	3	=	-	-	-
Absence of trade barriers	6	+	=	+	+
Quality of roads	7	+	=	=	+
Quality of port infrastructure	7	=	=	=	+
Quality of air transport infrastructure	6	-	=	-	-

3.5 Manufacturing activities

3.5.1 Labour intensive manufacturing

The labour intensive manufacturing activities are in need of a large workforce, low compensation level of manufacturing workers, the pay and productivity rate and the absence of trade barriers.

Based on these location needs, Belgium is one of the least attractive regions. This is mainly due to the high compensation levels and the medium score on pay and productivity. Also The Netherlands, Ireland, Poland and South Africa are in this group. Poland and South Africa score medium on most factors.
Germany, France, the UK, Czech Republic, USA, China, India and Singapore are very attractive. The developing countries score well as a result of the size of the available labour force and compensation level.

Belgium is the least attractive country, compared to our neighbours as a result of the high compensation levels of manufacturing workers and the relatively small workforce. As a result of the high compensation levels, Belgium is also characterised by low levels of pay and productivity.

Table 15 Country attractiveness for labour intensive manufacturing activities

Location factor	Belgium	Netherlands	Germany	France	UK
Total employment	3	-	-	-	-
Compensation level of manufacturing workers	1	=	=	-	-
Pay and productivity	3	=	-	-	-
Absence of trade barriers	6	+	=	+	+

3.5.2 Capital intensive manufacturing

Capital intensive manufacturing is mainly in need of a large domestic market size, a large foreign market size, the absence of trade barriers, high quality roads and a high quality port infrastructure. Taking in mind the country scores of all other important location factors, Belgium scores among the best worldwide. Also our neighbour countries, Ireland, Sweden, USA and Singapore score very high. Due to a medium score on most of the factors listed above, Czech Republic, Hungary, Poland, Brazil and South Africa score weak. If China and India had a better infrastructure, they would be in the group of the very attractive countries.
As a result of the larger domestic market size and the larger foreign market size (the value of goods sold in foreign markets) Germany, France and the UK are more attractive than Belgium for capital intensive manufacturing activities. For all other factors, Belgium scores equal or even better.

Table 16 Country attractiveness for capital intensive manufacturing activities

Location factor	Belgium	Netherlands	Germany	France	UK
Domestic market size	5	=	-	-	-
Foreign market size	6	=	-	-	-
Absence of trade barriers	6	+	=	+	+
Quality of roads	7	+	=	=	+
Quality of road infrastructure	7	+	=	=	+
Quality of port infrastructure	7	=	=	=	+

3.5.3 Skill intensive manufacturing

In locating skill intensive manufacturing activities, firms mainly focus on the compensation level of services workers, the availability of skilled labour, the quality of the educational system, the absence of trade barriers and the availability of scientists and engineers.

As a consequence of a high quality workforce and high standards of education, Belgium ranks among the most attractive countries. Also Germany, Ireland, Czech Republic, Sweden, USA, India and Singapore are very attractive. A medium score on most of the decisive location factors make Poland, China, Brazil and South Africa relatively unattractive compared to other countries. Mainly due to the very high compensation levels of services workers, the low real GDP growth and an average quality level of the education system, the UK ranks medium attractive.

The compensation level of services workers is not very different between Belgium and its neighbour countries. However, the availability of skilled labour poses a problem in attracting foreign firms. Germany and France score better whereas the Netherlands score equal and the UK worse. The quality of the educational system is very high in Belgium, better than in our neighbour countries. Also the other important issues, the absence of trade barriers and the availability of scientists and engineers is comparable to or even better than in Belgium's neighbour countries.

Table 17 Country attractiveness for skill intensive manufacturing activities

Location factor	Belgium	Netherlands	Germany	France	UK
Compensation level of services workers	2	=	=	=	=
Availability of skilled labour	4	=	-	-	+
Quality of educational system	7	+	+	+	+
Absence of trade barriers	6	+	=	+	+
Availability of scientists and engineers	6	+	=	-	+

3.6 Distribution activities

Distribution activities benefit from a large domestic market, a high real GDP growth, low compensation levels of manufacturing workers, flexible labour laws and regulations and a high quality road infrastructure. Especially France, the UK, Czech Republic, USA, China, India, Singapore and Australia score high on these criteria which make them relatively attractive.

A low GDP growth, high compensation levels and inflexibility in the labour law regulation make Sweden and the Netherlands relatively unattractive. Also Hungary and Poland are relatively unattractive mainly due to a medium score on all aspects.

Largely as a result of the flexible labour law and the quality of roads, Belgium is attractive for distribution activities. Weak points are however its GDP growth and the domestic market size. Once again, the high compensation levels make Belgium less attractive.

Table 18 Country attractiveness for distribution activities

Location factor	Belgium	Netherlands	Germany	France	UK
Domestic market size	5	=	-	-	-
Real GDP growth	2	-	+	+	=
Compensation level of manufacturing workers	1	=	=	-	-
Flexible labour law and regulations	6	+	+	+	=
Quality of roads	7	+	=	=	+

3.7 After sales services

After sales services are in need of a large workforce (measured by the total employment figure), the compensation level of services workers, the availability of language skills and the flexible labour laws and regulations. Taking these needs into account, Belgium scores among the most attractive countries together with the Netherlands, Sweden, USA, China, India, Singapore and Australia.
Belgium's weak points are again the compensation levels, the flexibility of wage determination, the non-wage labour costs and the extent and effect of taxation. However, Belgium is performing well due to the availability of language skills, the participation in and the quality of education, the flexibility of wage determination and the quality of air transport infrastructure.

France ranks low due to high compensation levels, shortages in the availably of language skills and a high burden of government regulations. Also Hungary, Poland, Brazil and South Africa are not attractive due to their average to weak score on the most important location factors.

Belgium is unattractive due to the size of the workforce. The compensation level of services workers is about the same whereas the availability of language skills and the flexibility of the labour law make Belgium more attractive than its neighbours.

Table 19 Country attractiveness for after sales activities

Location factor	Belgium	Netherlands	Germany	France	UK
Total employment	3	-	-	-	-
Compensation level of services workers	2	=	=	=	=
Availability of language skills	7	=	+	+	+
Flexible labour law and regulations	6	+	+	+	=

CONCLUSION

Location strategies of firms are closely related to their business strategy and the global environment in which firms operate. Linking the scope and timing of foreign operations to strategy, an optimal system configuration of activities organized across countries emerges. This system entails an alignment of the own value chain activities with those performed by partners.

The value chain configuration involves two interrelated choices. Firstly, a choice is made about the value chain activities that will be performed by the firm itself and those activities that will be outsourced. Secondly, and based on the outcome of the previous analysis, the optimal location of the value chain activities is decided.

An analysis of recent trends in location behaviour of multinational firms reveals that location behaviour should not be studied at the level of the firm but at the level of the different activities distinguished in the value chain of the firm. Following up this conclusion, this study identified the location determinants of the different value chain activities (phase 1), the attractiveness of each country for the major location factors (phase 2) and, combining phase 1 and phase 2, the attractiveness of each country for the different activities. Finally, a benchmark analysis is carried out where the relative attractiveness of different countries for the different activities is compared (phase 3).

The framework revealed Belgium's main weaknesses: the compensation levels of manufacturing workers and services workers, the inflexibility of the wage determination, the non-wage labour costs, the inconsistency of government policies, the extent and effect of taxation and the corporate tax rate. These weaknesses make Belgium unattractive for financial centre activities and labour intensive manufacturing activities. Thanks to many other positive factors, Belgium is reasonably attractive for R&D activities, administrative centres, and distribution activities. Belgium stays very attractive for logistics activities, capital intensive manufacturing activities, the skill intensive manufacturing activities and after sales activities.

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Appendix I: Weighted relative attractiveness

	Belgium	Netherlands	Germany	France	UK	Ireland	Czech Republic	Sweden	Hungary	Poland
R&D	4,8	5,0	5,4	5,2	5,0	5,3	4,5	5,7	4,4	3,6
Financial centre	3,8	4,7	4,5	4,2	4,6	5,6	3,9	4,9	3,9	3,6
Administrative centre	4,1	4,4	4,4	3,7	3,6	4,1	3,5	4,7	3,4	3,1
Logistics	4,9	5,1	5,3	5,3	5,2	4,7	4,7	5,1	4,3	3,8
Labour intensive manufacturing	3,7	3,9	4,6	4,4	4,5	4,1	4,7	4,2	4,4	4,1
Capital intensive manufacturing	5,6	5,5	6,1	5,9	5,5	5,1	4,7	5,7	4,6	4,0
Skill intensive manufacturing	4,8	4,6	5,0	4,7	4,4	5,6	4,8	5,4	4,6	3,8
Distribution	4,4	4,3	4,4	4,5	4,8	4,2	4,6	4,1	3,9	4,3
After sales Services	4,3	4,4	4,1	3,3	4,1	3,6	4,0	4,3	3,5	3,9

	USA	China	India	Singapore	Brazil	South Africa	Australia
R&D	5,3	4,2	5,4	5,6	3,6	3,8	5,0
Financial centre	4,8	3,9	4,4	5,8	3,3	3,8	4,8
Administrative centre	4,6	4,3	5,4	5,0	3,5	3,3	4,2
Logistics	5,8	4,5	4,7	6,4	3,5	4,4	4,8
Labour intensive manufacturing	5,3	5,3	5,5	5,4	4,4	4,0	4,3
Capital intensive manufacturing	6,1	4,9	5,0	6,2	4,0	4,8	5,1
Skill intensive manufacturing	5,0	4,3	5,4	5,8	3,3	3,5	4,7
Distribution	5,3	5,4	5,3	5,7	4,4	4,3	4,7
After sales Services	4,8	4,6	5,1	5,1	3,8	3,9	4,8

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